

• **ERD 60-05/C TYPE**

Simple effect linear solenoids of the ERD series have got a double coil, one of them with low resistive value (pulse coil) and the other one with high resistive value (holding coil). It is used commonly when a 100% duty-cycle and a huge force at the beginning of the stroke are needed.

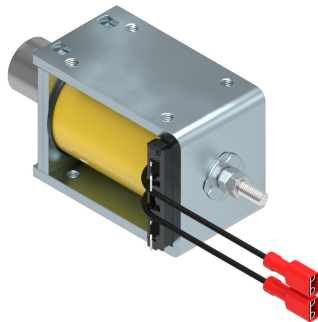


Figure1

Protection rate: **IP00**
 Insulation class: **B(130°C)**
 Standard voltage: **Vdc (24V; 48V; 110V; 125V)**
 Standard voltage: **Vac (110V60Hz; 230V50Hz)**
 Cycle duration: **3minutes**
 Working temperature: **(-10°C a 65°C)**
 Work: **Push / Pull**
 Return spring incorporated: **YES**
 Plunger weight (kg): **0.117**
 Solenoid weight (kg): **0.720**

Working:

Before the performance, when the solenoid is without voltage (see fig.3), the holding coil must be shorted circuit by an external microswitch (fig.2) connecting terminals 3 and 4. The solenoid is fed with its standard voltage U_n (between 1 and 2 terminals) and then only the pulse coil works (as it has got low resistive value, it will demand much power), and the solenoid shaft moves due to the forces indicated in chart 2. When total stroke is completed the solenoid shaft must push the microswitch and quit the short-circuit of the holding coil, so both serie coils start to work together, adding their resistive value and getting little demand of power.

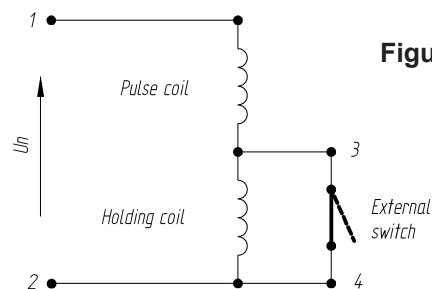


Figure2

Chart 1

Pulse coil	Duty cycle (ED%)				
	20	15	10	5	3
Abs. power at 20°C (W)	68	115	169	337	462
Max time under voltage (s)	36	27	15	8	5

Solenoid without voltage (s=20mm position)

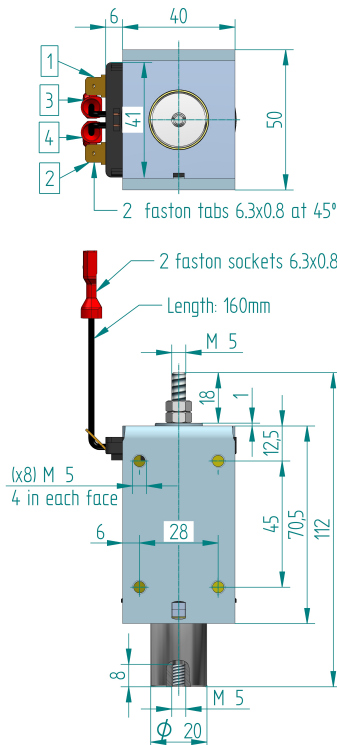


Figure3

Chart 2: Values of force without springs

Stroke "s" (mm)	Duty cycle ED(%)					Magnetic force Fm (N)
	20	15	10	5	3	
25	6	9	13	24	33	
20	8	13	18	33	46	
15	11	19	25	44	61	
10	18	28	36	64	88	
5	36	56	74	137	140	
3	63	94	114	162	188	
1	196	235	259	263	288	
0	378	390	411	436	440	

Chart 3

Springs	ERD60/5	ER60/5	ER60/5/B
Force (N) a 25mm	9,7	1,6	5
Force (N) a 0 mm	44	5,3	21
Constant (K)	1,37	0,15	0,65

*Earthing is recommended if the metallic parts are accessible.

⚠ Return spring can be mounted (customer selection), in standard ERD60/5 is mounted

Holding coil:
 Power: 4W
 Duty cycle (ED%): 100
 Holding force: 60N

All the solenoids are tested at 20°C. The force will decrease due to the room temperature rising, decreasing a 30% at 65°C. When the temperature is -10°C, standard current will increase a 15%. If any extra data is needed, please contact NAFSA.